German Navy’s most modern frigate enters service with MTU power

Words: Rolf Behrens | Pictures: Rolls-Royce Power Systems, thyssenkrupp Marine Systems

Tags/Keywords

Frigate „Baden-Württemberg“, the most modern vessel of the German Navy, has just entered service. German federal minister of Defense, Ursula von der Leyen, attended the handover ceremony of the new vessel which bears the name of the German federal state from which core components of its propulsion system derive: Propulsion and automation technologies from MTU play a decisive role for the service and success of the frigates of the new F125 class and enable the new intensive use concept of the German Navy for these vessels. The ships can remain in operation for up two years without interruption, only the crew will be exchanged each four months. This is possible only thanks to the reliability of MTU engines and the cutting-edge MTU automation system Callosum which allows for example for the maintenance of engine on board of the ships.

For the Class F125 frigates, MTU delivers diesel gensets and gas turbine modules which are a crucial part of the ships’ combined diesel-electric and gas turbine (CODLAG) propulsion system. Four gensets based on 20V 4000 M53B engines each producing 3,015 kW of mechanical output generate the electric power both for diesel-electric propulsion for cruising speeds of up to 20 knots and for the on-board power supply system. The four diesel engines are switched on or off sequentially depending on the power required so that they can be operated within their optimum range. That spares the engines and reduces fuel consumption. Major overhaul is only needed after five years of operation. This represents a quadrupling of the maintenance intervals as compared to previous classes of frigates.
During maintenance technicians receive support from MTU-developed automation system Callosum MT: The service and maintenance system constantly monitors all engine-related processes. If a malfunction occurs or a routine maintenance task is due, the system informs the relevant personnel immediately and in a very precise manner. The system does not only show where a malfunction occurred but also guides the mechanics through each step of repair, giving exact information on which tools, spare parts and consumables are needed. The technicians can also view a 3D video on the MTU station installed in the engine room, explaining how to carry out the repair.

The second vessel of class F125, called “Nordrhein-Westfalen”, is set to enter service later this year. A further two of these frigates with propulsion and automation technology from MTU are to be delivered within the next two years.

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